

**ABSTRACT OF THE DISCLOSURE**

A data processing system (2) is provided with multiple processors (4, 6) that share a main memory (18). Semaphore values associated with data elements within the memory system, including the main memory (18), are used to establish exclusive access permissions to those data elements. An exclusive access clear instruction (CLREX) is provided that serves to clear any partially completed exclusive access requests for a processor between the reading of a semaphore value and the writing of a semaphore value to establish the exclusive access permission.

[Figure 2]

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